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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/620,483

07/16/2003

Stephen B. Brown

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9077

39207

7590

10/05/2004

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EXAMINER

A, MINH D

ART UNIT

PAPER NUMBER

2821

DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/620,483	<b>Applicant(s)</b> BROWN ET AL.	
	<b>Examiner</b> Minh D A	<b>Art Unit</b> 2821	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 May 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,9-13 and 20-24 is/are rejected.
- 7) ☒ Claim(s) 3-8 and 14-19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/12/03</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-2, 10-1-13, 20-24 are rejected under 35 U.S.C. 102(e) as being unpatentable by Sanchez et al (US 2003/0112186).

Regarding claim 1 Sanchez discloses a low profile antenna system comprising (400 RAMC having the variable voltage, measuring and turning) for controlling a transmission of electromagnetic energy through a surface by passing selected frequencies in a pass-band and blocking selected frequencies in a stop-band; and dynamically modifying at least one of said pass-band and said stop-band by selectively varying at least one of a position and a volume of a conductive fluid forming at least a

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portion of said surface. See figures 4-16, col. 4, lines [0054] to col.7, lines [0081] to lines [0082].

Regarding claims 2 and 23, Sanchez discloses a plurality of elements of said frequency selective surface (FSS) to have a shape selected from the group consisting of tripoles, circles, crosses, Jerusalem crosses, rings, rectangles and squares. See figures 4-24.

Regarding claim 10, Sanchez discloses at least one of said position and said volume of said conductive fluid in response to a control signal by RAMC (400)

Regarding claim 11, Sanchez discloses at least one dimension of a plurality of periodic elements of said frequency selective surface (FSS). See figures 4-24.

Regarding claim 12, Sanchez discloses changing a shape of said plurality of periodic elements. See figures 2-24.

Regarding claims 13 and 24, Sanchez discloses a periodic resonance structure (capacitor) having a plurality of elements periodically spaced over a surface, each of said elements having a resonant frequency; a conductive fluid; and a fluid control system (RAMC 400) for varying at least one of a position and a volume of said conductive fluid within said periodic resonance structure to change at least one dimension of said plurality of elements. See figures 4-16, col. 4, lines [0054] to col.7, lines [0081] to lines [0082].

Regarding claim 21, Sanchez discloses wherein said fluid control system (RAMC) is responsive to a control signal. See figures 22-29.

Regarding claim 22, Sanchez discloses wherein said fluid control system dynamically modifies said resonant frequency. See figures 22-29.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable by Sanchez et al (US 2003/0112186).

Regarding claim 9, Sanchez essentially discloses the claimed invention but does not explicitly disclose that conductive fluid to be formed of gallium and indium alloyed with a material selected from the group consisting of tin, copper, zinc and bismuth. It would have been an obvious matter of design choice to employ Sanchez in any desired interest material in order to maximize the usage of his invention, since applicant does not disclose that, all of these limitations can solve any stated problem and for any particular purpose. Therefore, it appears that the invention would not provide any improvement but merely apply the invention in different presentation.

***Allowable Subject Matter***

5. Claims 3-8 and 14-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not teach that, the step of forming a plurality of elements of said frequency selective surface by defining periodic perforations of a selected geometry in a conductive ground plane in dependent claims 3 and 14.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Mckinzie III et al (US 6,646,605) and Wyeth et al. (US 2003/0169137) are cited to show a frequency selective surface technology.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Minh A whose telephone number is (571) 272-1817. The examiner can normally be reached on M-F (5:30 –2:30 PM).

If attempts to reach the examiner by telephone is unsuccessful, the examiner's supervisor, Don Wong, can be reached on (571) 272-1834. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and (703) 872-9319 for final communications.

Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center receptionist whose telephone number is (571) 272-1553.

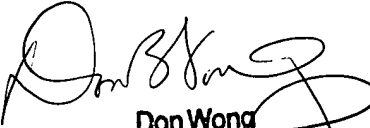
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Examiner

Minh A

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10/01/04

  
Don Wong  
Supervisory Patent Examiner  
Technology Center 2800